



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/690,238	10/21/2003	Minakshisundaran B. Anand	YOR920030315US1	4930
33233	7590	07/21/2005	EXAMINER LEVIN, NAUM B	
LAW OFFICE OF CHARLES W. PETERSON, JR. 11703 BOWMAN GREEN DRIVE SUITE 100 RESTON, VA 20190			ART UNIT 2825	PAPER NUMBER

DATE MAILED: 07/21/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

AK

**Office Action Summary**

Application No.

10/690,238

Applicant(s)

ANAND ET AL.

Examiner

Naum B. Levin

Art Unit

2825

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --****Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 21 October 2003.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-28 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-28 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 21 October 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 10/21/03.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

As to claim 2 Chang teaches:

A CAD system as in claim 1, wherein said input fields are geometric and property specification input fields (col.12, ll.40-67; col.13, ll.1-39).

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1- 28 are rejected under 35 U.S.C. 102(e) as being unpatentable by Meuris et al. (US Patent 6,665,849).

3. As to claims 1, 3 and 15 Meuris recites:

(1) A computer aided design (CAD) system for designing high performance circuits, said CAD system comprising:

a graphical user interface (GUI) having input fields including conductor and dielectric input fields (col.14, ll.51-67; col.15; col.16, ll.1-28; col.22, ll.40-46; col.32, ll.4-11; col.44, ll.9-29); and

a field solver using conductor and dielectric inputs to determine circuit interconnection electric parameters (col.5, ll.33-67; col.6, ll.45-65; col.9, ll.59-67; col.38, ll.44-65);

(3) A computer aided design (CAD) system comprising:

a template (equations/meshes with nodes and links/matrices) generation engine generating templates from interconnect configuration files (col.3, ll.46-67; col.4, ll.1-6; col.5, ll.33-64; col.7, ll.40-67; col.8, ll.1-23; col.9, ll.28-58; col.20, ll.7-54; col.26; col.27, ll.1-26);

a field solver generating broadband passive element relationships (passive structures) from said templates (col.38, ll.13-67; col.39; col.40, ll.1-63);

a circuit builder (structure generator) generating circuit description files (data structures/files) from device technology models and said broadband passive element relationships (col.28, ll.19-67; col.29, col.30; col.31, ll.1-19; col.41, ll.44-67; col.42, ll.1-15; col.44, ll.8-58); and

a simulator simulating circuit responses for transmission line models from said circuit description files (col.24, ll.18-67; col.25, ll.1-21; col.41, ll.44-67; col.42, ll.1-15; col.44, ll.59-67);

(15) A CAD system for designing high performance circuits, said CAD system comprising:

a graphical user interface (GUI) having input fields including conductor and dielectric input fields (col.14, ll.51-67; col.15; col.16, ll.1-28; col.22, ll.40-46; col.32, ll.4-11; col.44, ll.9-29);

a geometric conductor configuration module combining said conductor and dielectric field inputs, said geometric conductor configuration module producing an interconnect structure representation bounded by electromagnetic boundary conditions (col.38, ll.44-58; col.44, ll.8-58);

a field solver using produced said interconnect structure and the electromagnetic boundary conditions to determine interconnection structure parameters (col.5, ll.33-67; col.6, ll.45-65; col.9, ll.59-67; col.38, ll.44-65).

4. As to claims 2, 4-14 and 16-28 Meuris describes:

(2), (16) A CAD system, wherein said input fields are geometric and property specification input fields (col.44, ll.8-29);

(4) A CAD system as in claim 3, further comprising a geometry and material definition module receiving process description and generating said interconnect configuration files (col.14, ll.511-67; col.15, ll.1-56; col.44, ll.8-29);

(5), (6), (14) A CAD system, wherein process inputs are varied in said process description through a graphical user interface (GUI) (col.15, ll.57-67; col.16, ll.1-28);

(7), (8), (17), (18), (20), (24), (25) A CAD system, wherein said interconnect configuration tiles include two dimensional inductance templates and three-dimensional templates for interconnect wiring layers (col.7, ll.40-67; col.8, ll.1-23; col.20, ll.6-54; col.38, ll.44-58);

(9), (11), (21), (26) A CAD system, wherein said 2D and 3D capacitance templates provide multiple dielectric stack inclusion (col.22, ll.40-67; col.23; col.24, ll.1-16; col.38, ll.44-58);

(10), (22), (27), (28) A CAD system, wherein said broadband passive relationships include frequency dependent resistance and inductance (col.7, ll.40-67; col.8, ll.1-23; col.19, ll.13-33; col.20, ll.6-53; col.38, ll.44-58; col.44, ll.59-67);

(12), (13) A CAD system, wherein said template generation engine generates two dimensional (2D) broadband inductance templates for lines in a first layer and in at least each of a layer above and below said first layer (col.20, ll.6-54; col.38, ll.44-67; col.39; col.40, ll.1-62);

(19) A CAD system, wherein said 2D capacitive representation further includes a conductance representation of dielectric properties (col.6, ll.53-62);

(23) A CAD system, wherein the frequency dependent inductance effects include skin effects, proximity effects and return path proximity effects (col.4, ll.7-47; col.13, ll.40-64).

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Naum B. Levin whose telephone number is 571-272-1898. The examiner can normally be reached on M-F (8:00-4:30).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matthew S. Smith can be reached on 571-272-1907. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

N L

*Naum Levin*

*Naum Levin*

*AU - 2825*